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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: HLA-A1, A2 -A3,-A24,-B7,AND -B44 TUMOR ASSOCIATED ANTIGEN PEPTIDES AND COMPOSITIONS

(57) Abstract: A peptide or composition comprising at least one epitope or analog from CEA, HER2/neu, MAGE2, MAGE3, or p53.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/38949

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : A61K 38/00

US CL : 530/328; 514/15

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 530/328; 514/15

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
SEQ ID NO. 42

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 99/38973 (REED et al) 05 August 1999 (05.08.99), see amino acid residues 61-69 of SEQ ID NO. 211	1

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"B" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T"

later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X"

document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y"

document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&"

document member of the same patent family

Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/38941a

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claim Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claim Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☒ Claim Nos.: 16
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
Please See Continuation Sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: SEQ ID NO. 42

Remark on Protest

☐
☐

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

PCT/US03/38949

BOX II. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING

WO 99/38973 describes SEQ ID NO. 211 which at amino acid residues 61-69 contains the sequence HLFGYSWYK (SEQ ID NO. 42 of the instant application). This reads on claim 1 (a). Specifically it reads on a peptide comprising at least epitope or analog selected from SEQ ID No. 42. SEQ ID NO. 211 of the reference reads on claim 1(a) because (1) "analog" is not defined in the current application so it is assumed to mean a variant with any substitution, addition, deletion in claim 1(a) and (2) "comprising an epitope" reads on SEQ ID NO. 42 plus something else.

This application contains claims directed to more than one species of the generic invention. These species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In order for more than one species to be examined, the appropriate additional examination fees must be paid. The species are as follows:

Within claims 1-15 and 17-31, multiple combinations each of which are an invention which lack special technical feature from one another.

Applicant is required to choose one (1) epitope or one (1) combination of epitopes and to inform the office as to which claims read on the elected invention.

Due to the large number of possible combination, an exact amount of fees for search of entire application cannot be calculated precisely, but is estimated to be

Each epitope of combinations of epitopes could result in an immune response unique to the epitope or combination and one could not readily expect that substitution of one for another would result in identical immune response.

According to PCT Rule 13.2 and to the guidelines in Section (f)(i)(B)(1) of Annex B of the PCT Administrative Instructions, all alternatives of a Markush Group must have a common structure, which is a significant structural element. Although the claimed SEQ ID No. share a common structure of a single amino acid, the compounds are not regarded as being of similar nature because the shared common structure is not a significant structural element. A common structure of a single amino acid is not a significant structural element because the amino acid is found in every amino acid sequence.

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SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

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